


Article

# Customer Knowledge Management in SMEs Facing Digital Transformation

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**Abstract:** This paper provided a novel definition of customer knowledge management (CKM) as the logical intersection of customer relationship management (CRM) and knowledge management (KM). The main aim was to investigate the digital technologies supporting small and medium enterprises (SMEs) operating in creative industries in their customer knowledge management strategies. To achieve this aim, a survey involving 73 handicraft and/or retail SMEs operating in luxury jewelry industry was conducted. The survey results pointed out that in a few years the scenario has changed and that surveyed SMEs make more intensive use of traditional technologies supporting customer knowledge management processes rather than more innovative digital technologies, which are also cheap and easy to use. This finding showed the difficulties of SMEs operating in creative industries to be responsive to the rapid technological changes that are affecting CKM, as well as the lack of support from information technology vendors in the decision-making process for choosing adequate digital systems.

**Keywords:** creative industry; customer knowledge management (CKM); customer knowledge management systems (CKMSs); customer relationship management (CRM); digitalization; digital technologies; small business; survey

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## 1. Introduction

Recent research contributions revealed that enterprises are adopting digital technologies to improve their knowledge management processes that in turn have an impact on innovation, the market and financial performance [1–3]. The digital revolution has questioned the extant innovation and organisational learning theories [4]. For instance, Nambisan et al. (2017) [5] analysed how organisational axioms may be changed by the rise of digitalisation to renew a knowledge base and improve innovation performance. This evolving technological and organisational environment has required firms to improve their knowledge management (KM) processes (e.g., acquisition, storage, transfer) since a focus on internal knowledge or an exposure to external knowledge are not sufficient to increase innovativeness [6–10].

Meanwhile, information systems scholars found evidence that digitalization has a pivotal role for enabling external knowledge acquisition activities [11]. Nowadays firms therefore are focusing their efforts to digitalise their innovation processes [5], especially for KM objectives. In fact, the established organisational routines and processes affecting KM strategies are likely changing together with the direction being identified by the adoption of digital solutions for product and process innovation

(e.g., advanced business analytics, digital platforms, machine learning). For instance, the processes of knowledge acquisition, storage and transfer are changing in terms of the amount of data and information to be managed due to the emergence of appropriate digital infrastructures. Similarly, firms adopting digital solutions have to acquire and transform different types of external knowledge compared to non-digital firms, thus requiring the opportunity to use new knowledge management systems (KMSs) [12]. This means that digital innovation has created a new fluidity in innovation processes, however it is also asking firms to rethink the ways they can explore and exploit knowledge flows, and the way they can leverage on the adoption of digital platforms, infrastructures and artefacts [13–16].

In recent years creative industries have acquired a relevant role in European countries where small and medium enterprises (SMEs) represent a vast majority of all companies [17,18]. As for the epistemological perspective, the knowledge created in firms operating in creative industries is mainly tacit in nature [19]. As for the ontological perspective, in the context of SMEs operating in creative industries, customer knowledge is mainly embodied in organizational members and embedded in specific practices, know-hows and routines [20]. Despite the fact that previous authors have shown growing interest in investigating knowledge management processes in the context of creative industries, there is a lack of empirical papers aimed to investigate customer knowledge management issues [21,22].

Customer knowledge management is somewhat unique in the field of knowledge management [23]. Customer knowledge management integrates the set of organisational practices and dynamic skills related to the creation, storage and transfer of knowledge about the customer [24] to gain a sustainable competitive advantage in the market [25] and improve business efficiency through specific development strategies [26]. Nevertheless, although knowledge management has been studied in different fields and customer knowledge management has been investigated as an antecedent of sustainable and competitive success, further research is needed to analyse the role of customer knowledge management in the creative industry domain [27,28]. In this industry, managing customer knowledge through collaborative innovation paths has a critical role in achieving successful innovation practices [24]. Furthermore, Prahalad and Ramaswamy (2004) investigated the role of customer collaboration and enabling technologies to allow successful organisations to learn from their customers' needs, how to meet their demands and thus improve performance [29]. In this context, despite previous contributions focusing on specific relational tools, marketing tools and search optimisation tools, there is a clear need for a comprehensive overview of the digital technologies used by SMEs to support their customer knowledge management strategies. Within this evolving scenario, technology dynamics and digital transformation are increasingly offering to firms, in particular to SMEs, new digital technologies that are low cost, ease-to-use and effective [30–34].

With these premises, the main aim of this paper was to investigate the digital technologies supporting SMEs operating in creative industries in their customer knowledge management strategies. To achieve this aim, it is necessary to distinguish between different categories of technologies, namely relational tools, marketing tools and search optimisation tools.

The article is structured in six sections: the introduction (Section 1), the framework (Section 2), unit of analysis (Section 3), methodology (Section 4), presentation of findings (Section 5) and the conclusions and implications (Section 6).

## 2. Framework

Customer knowledge management represents a research area at the intersection between knowledge management and customer relationship management [35,36].

The main objective of the literature search was to analyse the state-of-the-art on customer knowledge management before moving to the digital technologies supporting customer knowledge management (CKM) strategies in order to identify potential gaps [37–39].

Customer knowledge management integrates the set of organisational practices and dynamic skills related to creating, conserving and transferring knowledge about the customer [24]. Previous research

highlights that customer knowledge management strategies pertain primarily to the socialization processes with customers that have a critical role in gaining a competitive advantage in the market [25,40]. Similarly, Srikantaiah et al. (2000) investigated how managing customer knowledge is crucial to achieve a better and more timely design of new products and services, competitive intelligence, customer commitment and loyalty, as well as a synergy of collaboration [41]. On the contrary, Butler (2000) highlighted the lack of attention paid to customer knowledge stating that customers know more about the organizations they do business with than the business knows about its customers [42]. Even though all businesses recognize that they are nothing without their customers, they rarely fully capitalize on the customer knowledge that their employees informally collect, avoiding a deep customer relationship which is one of the business strategies that organizations must adopt for competitive gains. Customer relationship focuses on obtaining information on customer's needs in order to improve customer satisfaction and increase its buying behaviour; once this customer relationship is achieved, the customer will avoid the high costs of switching to other businesses [40]. Davenport et al. (2001) focused on three main elements of customer knowledge: (1) company efforts to capture customer knowledge, (2) marketing activities, and (3) customer relationship management (CRM) [43]. In more detail the authors presented a comprehensive review of the efforts that an organization made to capture customers' knowledge focusing on the value of personal interactions. However, there is again a lacuna about the methods and tools to obtain this kind of knowledge. An important step was reached by Gibbert (2002) that identified five different styles of customer knowledge management depending on different sectors [44]: (1) prosumer (Toffler, 1980), where the customer could fill the dual roles of producer and consumer (e.g., Quicken; IKEA) [45]; knowledge in this case is more explicit. (2) Team-based co-learning (Gibbert, 2002), where inter-linkages are established with the customer base and standing by their interactive joints, the organization becomes attractive for many other companies for its learning performance standing by its own customer interactions (e.g., Amazon.com; Xerox, Holcim, Mettler, Toledo) [44]; knowledge in this case is both explicit and tacit. (3) Mutual innovation (Thomke and Hippel, 2002), where innovations come not from within the organization but from end-users (e.g., Silicon Graphics, Ryder) [46]; knowledge in this case is more tacit. (4) Communities of creation (Sawhney and Prandelli, 2000), where innovations come from end-users but in contrast to mutual innovation, it is not possible to collect end-user ideas and each customer has to interact with the others and the organization has to elaborate together the innovation knowledge (e.g., Microsoft; Sony; eBay, Holcim) [47]; in this case the knowledge is also more tacit. (5) Joint intellectual property (Gibbert, 2002) where as in mutual innovation, the organization has to collaborate with customers even though intellectual property does not reside in the organization but is 'owned' partly by the customers (e.g., Skandia assurance) [44]; knowledge in this case is more explicit.

Each type of customer knowledge has specific characteristics and requires specific tools to be achieved. At this point, it results as important to highlight the point of view of Rowley (2002) that formalized how recent technological tools facilitate the knowledge transfer, acquisition and elaboration [48]. Customer data can be collected as customer feedback, during transactions and through cookies and web-server logs. At this point there is no shortage of data in e-business, but it is necessary to clear and elaborate these data to achieve the right knowledge [48].

Managing customer knowledge through collaborative innovation paths has a critical role in achieving successful innovation practices [24]. Furthermore, Prahalad and Ramaswamy (2004) investigated the role of customer collaboration and enabling technologies to allow successful organisations to learn from their customers' needs, how to meet their demands and thus improve performance [29]. Despite that there are previous studies that address customer knowledge management with regards to its implications for business and projects [49–53], the necessity emerges of conducting further research in the creative industry domain [54]. In fact, although previous studies have investigated the specific benefits of applying customer knowledge management in the creative industry domain, these contributions do not investigate the specific technical and technological capabilities supporting firms to achieve these benefits [55]. In more detail, previous research suggested that in SMEs

belonging to creative industries the processes of the acquisition, storage and transfer of knowledge should leverage on knowledge nature that is mainly human-embodied through experience and extends to more institutionally-embodied knowledge where the organization's members develop capabilities through the integration of technological tools and organizational approaches [56,57]. In this context, digital technologies can support SMEs operating in creative industries to manage customer knowledge.

Moving to the technology-based customer knowledge management domain (Table 1), where relational tools are communication (e.g., email, blog, content management system) and the collaborative tools (e.g., social media) used to share knowledge and manage the relationships with customers that represent an active part in the communication process [58–60]. Zahay and Handfield (2004) analysed the use of a “shoppable Internet catalogue” developed with the customer [61]. Hsu et al. (2013) illustrated how the adoption of e-voting tools improves companies brand image and also increases customer satisfaction [62]. Syuhada and Gambett (2013) and Govender (2013) analysed the impact of social media on marketing strategies for micro-firms, whereas Pentina and Koh (2012), Durkin et al. (2013), Öztamur and Karakadılar (2014) and Nobre and Silva (2014) focused on small and medium ones [63–68]. Recent studies stated that the conversations among social media users have a great impact on their evaluation and demand [69]. Tussyadiah and Fesenmaier (2008), Cobe (2008) and Chen and Lin (2015) demonstrated the substantial potential of blogs for marketing strategies [70–72]. Yu et al. (2008), Ngu et al. (2010) and Patel et al. (2015) provided an overview of current trends of mash-up adoption [73–75].

**Table 1.** Papers dealing with the digital technologies supporting customer knowledge management strategies.

Digital Technologies	References
Relational Tools	Al-Mutawah et al. (2009); Chen and Lin (2015); Choundary (2013); Cobe (2008); Dotsika and Patrick (2013); Douligeris and Tilipakis (2006); Durkin et al. (2013); Edvardsson (2009); Goel et al. (2005); Govender, 2013; Grace (2009); Gresty (2013); Hsu et al. (2013); Huang and Lin (2010); Liu and Lopez (2014); Lopez-Nicolas and Soto-Acosta (2010); Malhotra et al. (2007); Ngu et al. (2010); Nobre and Silva (2014); Öztamur and Karakadılar (2014); Patel et al. (2015); Pentina and Koh (2012); Razmerita and Kirchner (2011); Rosu et al. (2009); Shih et al. (2012); Syuhada and Gambett (2013); Tussyadiah and Fesenmaier (2008); Wu (2001); Yu et al. (2008); Zahay and Handfield (2004)
Marketing Tools	An and Stern (2011); Blois (1999); Briggs and Hollis (1997); Cheung (2008); Drèze and Hussherr (2003); Duffy (2005); Emiliani (2000); Gosselin and Poitras (2008); Gross (2011); Hoffman and Novak (2000); Huang et al. (2009); Johnston (1999); Kim and Lee (2015); Lohtia et al. (2003); Mallinckrodt and Mizerski (2007); Manchanda et al. (2006); Mariussen et al. (2010); Patterson (1997)
Search Optimisation Tools	Dou et al. (2010); Ghose and Yang (2009); Goldfarb and Tucker (2011); Murphy and Kielgast (2008); Nasomyont and Wisitpongphan (2014); O'Neill and Curran (2011); Sen (2005); Shih et al. (2013); Yang and Ghose (2010)

Marketing tools are banner advertising, mobile advertising and direct email marketing used in CKM to share knowledge and manage the passive role of customers that are subjected to communication processes [76–78]. Briggs and Hollis (1997), Drèze and Hussherr (2003), Lohtia et al. (2003) and Manchanda et al. (2006) analysed the use of banner advertising [76–79]. Kim and Lin (2015) focused on mobile advertising in terms of the impact maximisation through targeted marketing based on the customer needs [80]. Gosselin and Poitras (2008), Cheung (2008) and Huang et al. (2009) described direct the adoption of email marketing whereas Hoffman and Novak (2000), Duffy (2005) and Mariussen et al. (2010) focused their attention on affiliate marketing [81–86]. Mallinckrodt and Mizerski (2007), Gross (2010) and An and Stern (2011) investigated the impact of advergames on

children-oriented marketing [87–89]. Patterson (1997), Blois (1999), Johnston (1999) and Emiliani (2000) investigated the influence of both business-to-business (B2B) and business-to-customer (B2C) on customer satisfaction [90–93].

Search optimisation tools represent the set of sponsoring activities made by a third service organization that focus their attention on a correlation between search engine optimisation (SEO) or search engine marketing (SEM) tools and the rank in search engine result pages (e.g., Google, Bing, Yahoo!) [94–103]. O’Neill and Curran (2011), Shih et al. (2013) and Nasomyont and Wisitpongphan (2014) focused their attention on search engine optimisation (SEO) [94–96], whereas Sen (2005), Murphy and Kielgast (2008) and Dou et al. (2010) analysed the use of search engine marketing (SEM) tools [97–99]. Ghose and Yang (2009), Yang and Ghose (2010) and Goldfarb and Tucker (2011) [100–102] showed the opportunity offered by search engine advertising as a tool to advertise websites in search engines.

In summary, previous contributions have focused on specific relational tools (29), marketing tools (18) and search optimisation tools (9), but did not offer a comprehensive overview of their adoption by SMEs. There is therefore a clear need for a deeper analysis of the digital technologies used by SMEs in the field of customer knowledge management. The above literature gap allows us to formulate the following research question (RQ):

*RQ: What are the main digital technologies supporting SMEs operating in creative industries in their customer knowledge management strategies?*

In order to provide an answer to the above research question, the following section provides an overview of the unit of analysis in which the survey was conducted.

### 3. The Unit of Analysis

The analysis was conducted in a sample of 73 firms operating in Campania (Southern Italy). The sampling strategy adopted was the judgment sampling, a non-probability-based sampling method. According to Malhotra, Birks and Wills (2013), in non-probability judgmental sampling, the authors choose the sample group based on their judgments and preferences in order to address the purpose of the study. Considering the specific sector analysed, we employed this sampling technique since a limited number of enterprises operated in the context of investigation.

Regarding data collection, the survey was conducted in a web-based mode. The final sample comprised micro, small and medium firms (European Commission, 2005. The New SME Definition. User Guide and Model Declaration. DG Enterprise & Industry, Bruxelles) operating in luxury jewellery handicraft and/or retail, as well as 17 firms operating in other industries out of the scope of research (food, security, tourism, etc.). The total employment was about 2000 people and the total turnover was around 300,000 Euros in 2016.

Table 2 shows that most of the firms belonging to the sample operated in the retail industry (46 firms); 19 firms operated in both the handicraft and the retail industries; finally, there were eight handicraft firms that were not retailers.

**Table 2.** Firm industries.

Overall Economic Industry	Number of Firms	%
Handicraft	8	10.96
Retail	46	63.01
Handicraft/Retail	19	26.03
<b>Total</b>	<b>73</b>	<b>100</b>

### 4. Methodology

The spread of world wide web significantly increased the number of easily accessible documents and information related to companies. In this context, the potential of document analysis, which aims at extracting symbolic and structured information from online sources, represents a novel and attractive methodology of investigation. In this paper, a two-phase methodology to conduct a field

analysis involving SMEs operating in creative industries was adopted (Appendix A). These phases are summarised below:

- Data search and collection. In this phase, company websites and other relevant sources were identified and analysed to collect information about the adoption of digital technologies supporting customer knowledge management strategies. All the relevant data were collected in a shared database and cross-checked by all the researchers [103,104].
- Confirmatory analysis. In this phase, the information collected in the previous step was confirmed and/or supplemented by interviews to ensure the reliability of the results [105,106].

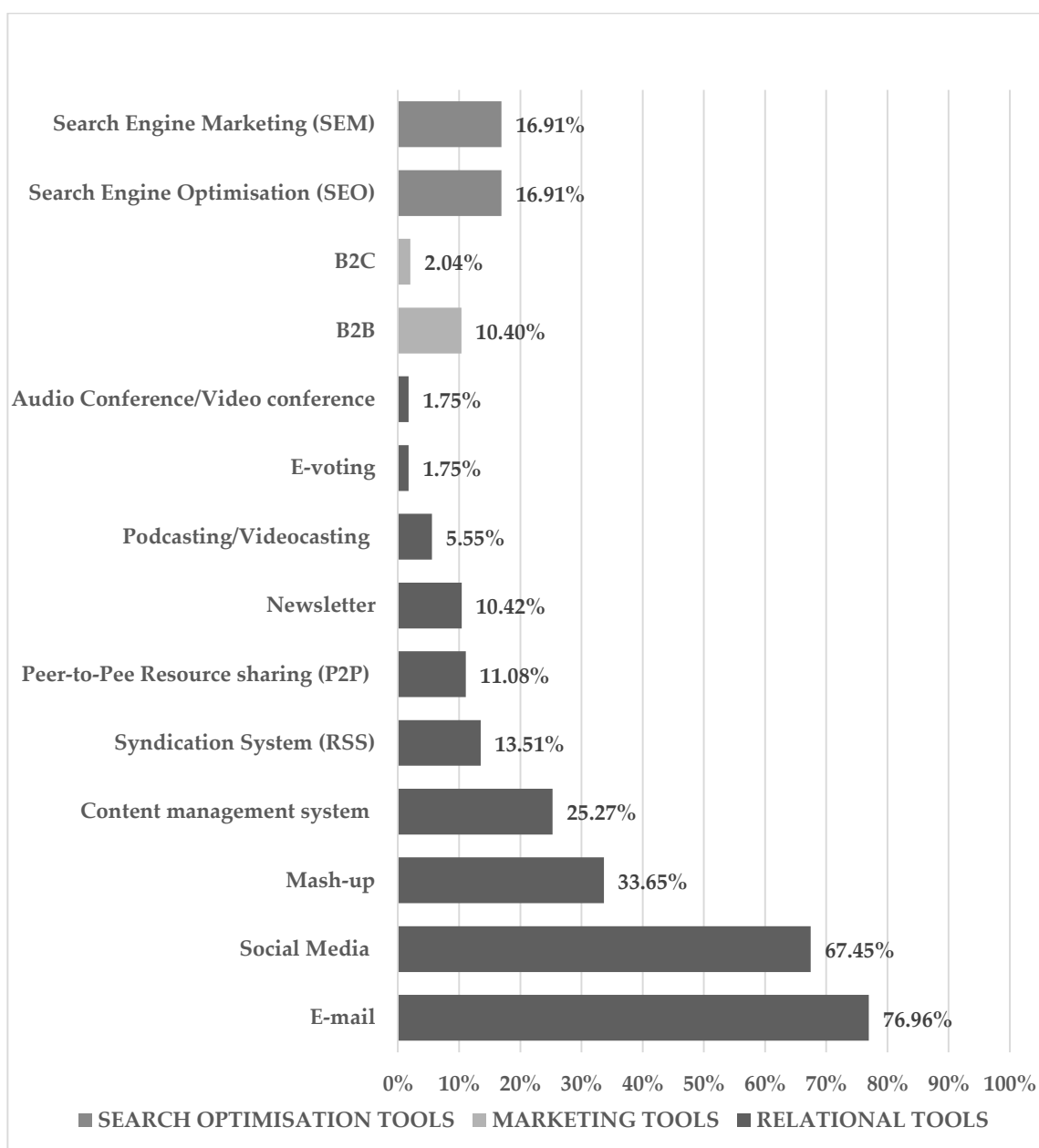
The methodology was conducted through the following five steps:

- I. *Defining survey objectives*, in which the basic aims were identified;
- II. *Defining the draft list of digital technologies supporting customer knowledge management*, in which a first list was prepared using the tools identified in the body of literature;
- III. *Establishing focus group*, in which KM experts with different competences were involved to define the list of tools;
- IV. *Testing the survey on the unit of analysis*, in which was conducted a pilot field analysis of five SMEs to integrate the final list;
- V. *Implementing survey*, in which was conducted a comprehensive analysis of the SMEs' webpages and information from phone calls and/or complementary sources were collected and analysed.

## 5. Presentation of Findings

This section reports the set of digital technologies emerging from the literature review findings on the topic of customer knowledge management and adapted to the unit of analysis. Specifically, a draft list of tools was obtained by adapting those proposed in the literature (see II step of methodology). Afterwards, this draft list was submitted to a number of KM experts (see III step of methodology). The feedbacks received and the pilot test of the survey were used to develop a final list (see IV step of methodology). The digital technologies included in the final list were divided into relational tools, marketing tools and search optimisation tools.

The percentage of use of each digital technology supporting the surveyed firms in their customer knowledge management strategies was evaluated. With regard to the relational tools, Figure 1 highlights that their percentage of use ranged from 1.75% (audio conference/video conference and e-voting) to 76.96% (e-mail), with a mean equal to 24.74%. The high value of the variance indicated that the intensity of use of relational tools by the selected firms were very spread out around the mean and from each other.



**Figure 1.** Percentage of adoption of the digital technologies supporting small and medium enterprises (SMEs) in customer knowledge management.

A first group of relational tools adopted with a percentage higher than 50% included e-mail (76.96%) and social media (67.45%). As two of the most widespread and popular tools, they represented a fast way for customers to contact firms and ask questions. Moreover, these two tools did not require advanced skills for users and had a time and cost of adoption close to zero.

Table 3 highlights how the different tools were used by SMEs belonging to the different sectors. Handicraft and handicraft and retailer sectors tended to adopt e-mail (87.50% and 84.21%, respectively) instead of social media (62.50% and 68.42%), while on the contrary retailers showed a more intense use of social media (71.43%) than e-mail (59.18%).

A second group of relational tools with a percentage of adoption between 10% and 40% included mash-up (33.65%), content management systems (25.27%), syndication systems (13.51%), peer-to-peer resource sharing (11.08%) and newsletters (10.42%). Excluding newsletters and peer-to-peer resource sharing, the latter are tools whose adoption requires more advanced skills. This group of tools has

the same distribution among the three different sectors except for newsletters that are not used by handicraft. A third group of relational tools adopted with a percentage lower than 10% included podcasting/videocasting (5.55%), audio conference/video conference (1.75%) and e-voting (1.75%). Although the above tools have a very low cost of adoption and require basic skills, they were scarcely adopted by the surveyed SMEs. Focusing on the specific sectors, the results showed that only handicraft and retailer SMEs adopted these tools, even though the percentage was low (5.26%).

As for marketing tools, business-to-business (B2B) were used with a percentage of 10.40% followed by the business-to-customer (B2C) with 2.04%. Specifically, the marketing tools used by the surveyed SMEs were the online marketplace, which allows firms to create profiles and sell products to customers or to other firms (respectively B2C or B2B). Product information is provided by the firm, but transactions are processed by the marketplace. The majority of surveyed SMEs adopted eBay, which is one of the most adopted marketplaces in Italy.

Table 4 highlights how the B2B solution was equally distributed among retailer, handicraft and handicraft and retailer, even though B2C solutions were used exclusively by retailer enterprises.

Concerning search optimisation tools, search engine optimisation (SEO) and search engine marketing (SEM) were adopted by 16.91% of surveyed SMEs.

Table 5 highlights how SEO tools and SEM tools were preferred in customer-oriented firms as retailer and handicraft and retailer (with 22.45% and 15.79%).

In summary, as for relational tools, this paper highlighted that the majority of investigated firms adopted only one digital technology to support customer knowledge management strategies. Regarding marketing tools, these findings seemed to point out that the surveyed SMEs scarcely adopted the few digital technologies represented by marketplaces, but all the firms neglected other tools identified in the literature, such as direct email marketing, banner advertising, affiliate marketing and advergaming.

Finally, concerning search optimisation tools, the selected SMEs tended to adopt search engine optimisation (SEO) and search engine marketing (SEM).

These results showed that the investigated SMEs made more intensive use of traditional digital technologies supporting customer knowledge management processes, rather than more innovative digital technologies, despite the latter being generally cheaper, more user-friendly and more effective [30,32–34]. Furthermore, the differences between the handicraft and the retailer sectors were linked with the nature of the sectors. Companies belonging to handicraft sectors were on average more inclined to adopt more formal digital tools (e.g., the e-mail), whereas retailers tended to adopt more informal tools (e.g., the social media) considering that customer knowledge from tacit sources is becoming an important organizational asset [57]. The results highlighted that customer knowledge in handicraft companies was more explicit in nature and embedded in specific know-hows and routines. On the contrary, customer knowledge managed by retail companies tended to be more tacit in nature and mainly embodied in organisational members. Companies belonging to the handicraft and retailer sector were in the middle of these two behaviours, but they were on average more inclined to adopt formalised tools showing a more explicit customer knowledge identity.

The proposed results were in line with the previous study by Centobelli et al. (2019) [12], in which it was assumed that the relational tools, marketing tools and search optimisation tools supported firms to manage knowledge in the different processes of knowledge creation, storage and transfer. For instance, as for the relational tools, mash-up and syndication systems can support firms in customer knowledge creation processes, content management system can support customer knowledge storage, whereas other digital technologies (e.g., e-mail, social media, peer-to-peer resource sharing, podcasting/videocasting, audio conference/video conference) can support customer knowledge transfer.



**Table 3.** Percentage of adoption of the relational tools by firm sector.

	<b>E-Mail</b>	<b>Social Media</b>	<b>Mash-Up</b>	<b>Content Management System</b>	<b>Syndication System (RSS)</b>	<b>Peer-to-Peer Resource Sharing (P2P)</b>	<b>Newsletter</b>	<b>Podcasting Videocasting</b>	<b>E-Voting</b>	<b>Audio Conference Video Conference</b>	<b>Relational Tools</b>
Retailer	59.18%	71.43%	28.57%	24.49%	12.24%	10.20%	10.20%	6.12%	0.00%	0.00%	<b>22.24%</b>
Handicraft	87.50%	62.50%	25.00%	25.00%	12.50%	12.50%	0.00%	0.00%	0.00%	0.00%	<b>22.50%</b>
Handicraft and Retailer	84.21%	68.42%	47.37%	26.32%	15.79%	10.53%	21.05%	10.53%	5.26%	5.26%	<b>29.47%</b>

**Table 4.** Percentage of adoption of the marketing tools by firm sector.

	<b>B2B</b>	<b>B2C</b>	<b>Marketing Tools</b>
Retailer	8.16%	6.12%	<b>7.14%</b>
Handicraft	12.50%	0.00%	<b>6.25%</b>
Handicraft and Retailer	10.53%	0.00%	<b>5.26%</b>

**Table 5.** Percentage of adoption of the search optimisation tools by firm sector.

	<b>Search Engine Optimisation (SEO)</b>	<b>Search Engine Marketing (SEM)</b>	<b>Search Optimisation Tools</b>
Retailer	22.45%	22.45%	<b>22.45%</b>
Handicraft	12.50%	12.50%	<b>12.50%</b>
Handicraft and Retailer	15.79%	15.79%	<b>15.79%</b>

## 6. Conclusions and Implications

The main aim of this paper was to investigate the digital technologies supporting SMEs operating in creative industries in their customer knowledge management strategies. According to the body of literature on the topic, the main digital technologies adopted in the customer knowledge management domain were divided into three groups: (1) relational tools, (2) marketing tools and (3) search optimisation tools. As for the relational tools, it emerged that firms generally used traditional digital technologies. This aspect was a managerial implication for information technology vendors to capture the attractiveness of the increasing market represented by SMEs. On the other hand, it was a policy implication to support SMEs, which need financial incentives for their technological and digital innovation. Concerning the marketing tools, this paper highlighted that the surveyed SMEs leveraged on marketplaces. Nevertheless, it also emerged that in this case SMEs tended to not adopt more updated tools (e.g., direct email marketing, banner advertising, affiliate marketing, advergames). Regarding the search optimisation tools, the paper seemed to point out that a major percentage of the investigated SMEs tended to adopt SEO and SEM.

This paper highlighted that the surveyed SMEs adopted and made more intensive use of traditional technologies supporting customer knowledge management processes rather than more innovative digital technologies, despite the latter being generally cheaper, more user-friendly and more effective. This result was in line with the previous studies by Centobelli et al. (2016) [31], in which it was assumed that SMEs typically did not have dedicated resources to monitor the evolution of the digital market and were not even able to follow technological dynamics, and these aspects forced them to remain in a backward position. Furthermore, the results were in line with the previous literature on KM in SMEs showing that small and medium enterprises were not simply a scaled-down replica of large firms and behaved like entities without a strategy of their own for addressing the processes of customer knowledge management [20,31,107–110].

As for the main theoretical implications, this research paved the way for further and in-depth analysis concerning the recent technological and managerial evolution of knowledge management systems [12,111,112]. In fact, KMSs are becoming a combination of knowledge management tools, namely specific IT-based systems supporting knowledge management processes, and knowledge management practices, which are defined as methods and techniques to support the organisational processes of knowledge management. Therefore, according to the previous results proposed by Carayannis (1999) and Centobelli et al. (2019) [12,113], in which it was assumed that KM played a crucial role in fostering a synergistic symbiosis between technological capabilities and managerial/organizational practices, the necessity emerged of analysing the degree of alignment between the tools and practices supporting CKM processes.

As for the practical implications, the differences between SMEs and large companies, in terms of size, structure and processes, lead them to be completely different in knowledge management processes and also in the way customer knowledge is managed. However, in many industries, SMEs represent a significant percentage of companies. Therefore, to catch this opportunity, it is necessary to strengthen the link between KMS providers and companies with direct channels and create new market segments dedicated to SMEs to offer them digital solutions tailored to their businesses.

As for the future directions, future research can conduct secondary document analysis to investigate the degree of adoption of the digital technologies investigated in this paper in order to extend and enhance the generalisation of these findings.

### Limitations

This research was based on the empirical analysis of SMEs operating in creative industries that had the scope to be tested in different contexts. Therefore, future research needs to extend these results.

**Author Contributions:** P.C. and R.C. conceived and designed the paper; F.C., P.C., R.C., E.E., E.O. and R.P. conducted scientific literature review, analysed and interpreted the data; R.C. supervised the work. Authors are listed in alphabetical order. All authors have read and agreed to the published version of the manuscript.

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**Conflicts of Interest:** The authors declare no conflict of interest.

## Appendix A

### Managing Customer Knowledge

This survey aims to collect information about the adoption of digital technologies supporting customer knowledge management strategies in creative industries. The questionnaire consists of two main sections. Section 1 includes general information about the company. Section 2 includes a list of tools for which it is asked to tick a box to specify if it was used or not.

#### 1. General information about the company

**Name of company:**

**Address:**

**Main industry:**

**Number of employees:**

#### 2. Digital technologies supporting customer knowledge management strategies (Relational Tools, Marketing Tools and Search Optimisation Tools)

Tick the box if the company uses one or more of the following tools (multiple choice is allowed)

<i>Relational Tools</i>	Yes	No
	1	0
Social Media	<input type="checkbox"/>	<input type="checkbox"/>
E-mail	<input type="checkbox"/>	<input type="checkbox"/>
Mash-up	<input type="checkbox"/>	<input type="checkbox"/>
Content Management Systems (CMS)	<input type="checkbox"/>	<input type="checkbox"/>
Syndication Systems (RSS)	<input type="checkbox"/>	<input type="checkbox"/>
Newsletter	<input type="checkbox"/>	<input type="checkbox"/>
Peer-to-Peer Resource Sharing (P2P)	<input type="checkbox"/>	<input type="checkbox"/>
Podcasting/Videocasting	<input type="checkbox"/>	<input type="checkbox"/>
Audio Conference/Video Conference	<input type="checkbox"/>	<input type="checkbox"/>
E-voting	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify) _____		

<i>Marketing Tools</i>	Yes	No
	1	0
Business-to-Business (B2B)	<input type="checkbox"/>	<input type="checkbox"/>
Business-to-Business (B2C)	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify) _____		
<i>Search Optimisation Tools</i>	Yes	No
	1	0
Search Engine Optimisation (SEO)	<input type="checkbox"/>	<input type="checkbox"/>
Search Engine Marketing (SEM)	<input type="checkbox"/>	<input type="checkbox"/>
Other (please specify) _____		

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